POPOVKIN, B.A.; ZLOMANOV, V.P.; NOVOSELOVA, A.V.

Thermal decomposition of lead selenate and lead selenite. Zhur. neorg. khim. 5 no.10:2261-2264 O '60. (MIRA 13:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Lead selenate) (Lead selenite)

85606

S/078/60/005/010/026/030/XX
B017/B067

26.2420

AUTHORS: Popovkin, B. A., Zlomanov, V. P., and Novoselova, A. V.

TITLE: Study of the Thermal Decomposition of Lead Selenate and Lead Selenite

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 10, pp. 2261-2264

TEXT: In the present paper, the authors studied the thermal decomposition of lead selenite and lead selenate by means of thermogravimetric and thermographic methods of analysis. The phases obtained on the thermal decomposition were examined by chemical analysis and by X-ray phase analysis. The interplanar spacings (d) and the relative lines of intensity of the X-ray pictures of lead selenite and lead selenate are given. The thermal stability of lead selenate and lead selenite was examined by continuous photography. The thermograms of lead selenite showed that it melts at 675°C under decomposition. When this compound melts, selenium dioxide vapors are formed. Two endothermic effects at 645 and 715°C were observed on the thermograms of lead selenate. The first thermal effect at 645°C

Card 1/2

66294
SOV/78-4-12-2/35

~~5(2), 5(4)~~ 5.4210(A)

AUTHORS: Zlomanov, V. P., Popovkin, B. A., Novoselova, A. V.

TITLE: Measurement of the Pressure of Saturated Vapor of Solid Lead Selenide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 12, pp 2661-2664 (USSR)

ABSTRACT: Photoelectrically active PbSe films were produced by vacuum evaporation of PbSe and subsequent heating in an atmosphere of low oxygen pressure (Ref 2). For this procedure it is essential to know the vapor pressure of PbSe at different temperatures. The authors made this investigation within the temperature range 501-668°C. The PbSe was obtained by fusion of the two components in stoichiometric ratio. Analysis and X-ray pictures confirmed the degree of purity of the resulting compound. It was further shown that PbSe is identical with its sublimate (Table 1). The pressure of the saturated vapor was measured (Table 2) by a method earlier described (Ref 10). Vapor pressure measurement was also made according to Knudsen within the temperature range 641-718° (Table 4). The opening of the effusion chamber was gauged (Table 3) by means of potassium chloride evaporation according to data published by A. N.

Card 1/2

SOV/78-3-9-33/38

AUTHORS: Novoselova, A. V., Pashinkin, A. S., Popovkin, B. A.

TITLE: The Behavior of Selenium Impurities in Vacuum Distillation of Tellurium (K voprosu o povedenii primesi selena pri vakuumnoy destillyatsii tellura)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 9, pp 2211-2212 (USSR)

ABSTRACT: The distribution of selenium impurities in tellurium in vacuum distillation was examined. The quantitative determination of the distribution of selenium in tellurium was achieved by means of radioactive isotopes of selenium. The corresponding distribution curves of tellurium and the addition of selenium, depending on the condensation temperature, were drawn on the basis of the results obtained (Fig 1). Attempts at commercial purification of tellurium with 0,8% selenium by vacuum distillation did not yield a serviceable separation efficiency. The distillation was carried out at temperatures of 520 to 540°C. Vacuum distillation does not effect a separation of selenium impurities in tellurium. Tellurium and selenium are miscible at every ratio and also in solid state when they

Card 1/2

The Behavior of Selenium Impurities in Vacuum Distillation of Tellurium

form complex mixed molecules, which render separation more difficult.
There are 1 figure, 1 table, and 9 references, 7 of which are Soviet.

SUBMITTED: January 30, 1958

L 06573-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6029814 (A) SOURCE CODE: UR/0363/66/002/008/1397/1402

AUTHOR: Novoselova, A. V.; Odin, I. N.; Popovkin, B. A.

ORG: Department of Chemistry, Moscow State University (Moskovskiy gosudarstvennyy universitet, khimicheskiy fakul'tet)

TITLE: Investigation of the PbSe-PbI_2 cross section of the ternary system Pb-Se-I_2

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 8, 1966, 1397-1402

TOPIC TAGS: lead, selenium, iodine, phase diagram, phase structure, phase equilibrium

ABSTRACT: The fusibility diagram of the PbSe-PbI_2 system was studied by thermal, x-ray, and microstructure techniques. The samples were prepared by fusing suitable mixtures of pure components in vacuo. The results are graphed and tabulated. The diagram of the PbSe-PbI_2 system was found to have one eutectic point. At this point, at 384°C, the PbSe content is equal to 14 mol %. Under cooling, the melts of the PbSe-PbI_2 system were found to behave as if they were in a non-equilibrium condition. This was reflected in compensation effects on the cooling curve. X-ray examination revealed two modifications of PbI_2 in the melts. The solubility limit of PbI_2 in the solid PbSe at 384°C was found to be equal to 0.8 mol % PbI_2. Orig. art. has: 3 figures, 2 tables.

SUB CODE: 11,20/ SUBM DATE: 28Mar66/ ORIG REF: 001/ OTH REF: 004

UDC: 546.815+546.23+546.15

Card 1/1

KIZUB, F.; SHCHEKUTEV, Ya.; REPICHEV, A.; KOROSTELEV, I.; MARTYNENKO, P. TARANIK, F.; TYRINOV, P.; POPOVKIN, N.

Hidden potentialities for the economy of working time. Den. i kred. 19 no.3:50-62 Mr '61. (MIRA 14:3)

1. Zamestitel' glavnogo bukhgaltera Ukrainskoy respublikanskoy kontory Gosbanka (for Kizub). 2. Glavnyy bukhgalter Ryazanskoy oblastnoy kontory Gosbanak (for Shchekutev). 3. Glavnyy bukhgalter Starorusskogo otdeleniya Gosbanka Novgorodskoy oblasti (for Repichev). 4. Glavnyy bukhgalter Gul'kevichskogo otdeleniya Gosbanka Krasnodarskogo kraya (for Korostelev). 5. Zamestitel' glavnogo bukhgaltera Krasnoyarskoy krayevoy kontory Gosbanka (for Martynenko). 6. Glavnyy bukhgalter Pereyaslav-Khmel'nitskogo otdeleniya Gosbanka Kiyevskoy oblasti (for Taranik). 7. Glavnyy bukhgalter Tonshayevskogo otdeleniya Gosbanka Gor'kovskoy oblasti (for Tyrinov). 8. Glavnyy bukgalter Novo-Ukrainskogo otdeleniya Gosbanka Kirovogradskoy oblasti.

(Banks and banking--Accounting)
(Machine accounting)

L 08090-67 EWT(d)/EWT(m)/EWP(f) FDN

ACC NR: AP6029991 SOURCE CODE: UR/0413/66/000/015/0196/0196

31
13

INVENTOR: Popovkin, N. A.

ORG: none

TITLE: Bottom shutter cylinder for an air-intake duct. Class 62, No. 184149

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 196

TOPIC TAGS: air intake system, engine compressor system

ABSTRACT: This Author Certificate introduces a bottom shutter cylinder for an air-intake duct, consisting of a housing, a rod with annular catch, and a floating, spring-supported piston. For more dependable operation the system has a second annular catch around the first, and an inner bushing is hermetically connected with the housing of the cylinder and with the rod. Orig. art. has: 1 figure. [SA]

SUB CODE: 21/ SUBM DATE: 14Apr64

UDC: 629.13.01/.06

Card 1/1

L 38159-66 EWT(1)/T-2 WW

ACC NR: AP6025667 SOURCE CODE: UR/0413/66/000/013/0134/0134

INVENTOR: Grachev, V. I.; Morgunov, G. M.; Popovkin, N. A.

ORG: none

TITLE: Mechanical lock for aircraft actuating cylinders. Class 47, No. 183561

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 134

TOPIC TAGS: aircraft power equipment, aircraft control equipment, aircraft actuating equipment

ABSTRACT: An Author Certificate has been issued for an aircraft actuating cylinder consisting of a cylinder with a rod locked in it by means of a split collar which is

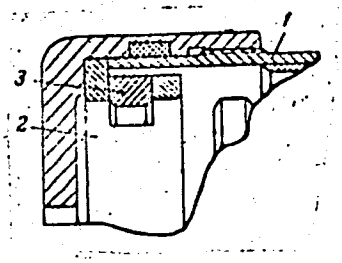


Fig. 1. Section of an aircraft actuating cylinder

1 - Cylinder housing; 2 - separator; 3 - split collar.

Card 1/2 UDC: 621.83.629.13.01

POPOVKIN, V. I.

Distr: 4E4c

Popovkin, V. I. Application of a variational method to solution of a problem on diffraction of two-dimensional cylindrical electromagnetic waves at an opening in a conducting screen. Kazan. Aviac. Inst. Trudy 29 (1955), 47–68. (Russian)

This paper deals with the problem of radiation from a rectangular waveguide through a rectangular opening in an infinite screen perpendicular to the axis of the waveguide. The method used is a variational one, developed by G. V. Kisunko [Dokl. Akad. Nauk SSSR (N.S.) 66 (1949), 863–866; MR 10, 764]. The standing wave ratio in the waveguide is calculated as a function of frequency for aperture half as big as the waveguide cross-section.

The method used does not compare favorably with the Schwinger variational method. Kisunko's method involves the actual approximate calculation of the aperture field, from which the reflection coefficient is then calculated; it does not give (as Schwinger's method does) an expression for the reflection coefficient as a functional of the aperture field, stationary with respect to variations in the aperture field. *J. Shmoys* (Brooklyn, N.Y.).

4
1-F\W
/
1/1

POPOVKIN, V. I.

V. I. POPOVKIN: "Synthesis of linear antennas and wide-band antenna transformers." Scientific Session Devoted to "Radio Day", May 1958, Trudrezervizdat, Moscow, 9 Sep. 58

Engineering problems of synthesizing linear antennas and wideband antenna transformers in the form of inhomogeneous lines having finite length are analyzed.

Investigated are the conditions for the synthesis problem to be solvable. Limitations on the assigned problem for which a solution exists are established.

A general method is presented to solve the problem of synthesizing linear antennas and wideband antenna transformers with a discrete source distribution.

An approximate solution of the problem of synthesizing linear antennas and wideband antenna transformers with a continuous source distribution is analyzed.

S/109/62/007/004/013/016
D271/D302

9,1700

AUTHOR: Popovkin, V.I.

TITLE: Determination of the antenna length from a prescribed radiation pattern

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 4, 1962, 705 - 708

TEXT: The problem is analyzed of finding a class of radiation patterns which allow an accurate synthesis of antennas with a limited variation of the source distribution function, and of finding the necessary antenna length from a prescribed pattern belonging to the above class.. The sources of electromagnetic field may be distributed in a continuous or discrete manner; in both cases the antenna may be described by Stieltjes integral

$$F(u) = \int_{-a}^{+a} e^{iux} d\,\Phi(x), \quad -1 \leq u \leq 1, \tag{3}$$

Card 1/3

Determination of the antenna ...

where F(u) is the prescribed complex multiplier representing the relation of the required pattern of the system and the directivity of an element of the system; $u = \sin\theta$ and $-\pi/2 \leq \theta \leq \pi/2$ is an angle counted from the normal to the system axis; $a = \pi(l/\lambda)$ and l is the length of the antenna; $\Phi(x)$ is the law of distribution of radiators along the axis; $\Phi(x)$ is assumed to be a complex-valued function with limited variation. F(u) is determined for complex values $\xi = u + iv$ and must be an integer function of finite order $0 < a < \infty$, limited on the real axis. The dimensions of the antenna are determined by the dimensions of the smallest convex area containing all the peculiar points of $f(\xi)$ which is the Borel associated function of $F(\xi)$; this area lies along the imaginary axis. In the case of $\varphi = \pi/2$, where φ is the angular coordinate of $F(\xi)$, it is found that the length of the antenna is

$$l = \frac{1}{\pi} h\left(\frac{\pi}{2}\right), \tag{9}$$

where

$$h\left(\frac{\pi}{2}\right) = \overline{\lim_{r \to \infty}} \frac{\ln |F(-ir)|}{r}, \tag{10}$$

Card 2/3

Determination of the antenna ...

$h(\varphi)$ is called growth indicator of $F(\xi)$. The root density of the required radiation pattern must be equal to the electrical length of the antenna $\Delta = l/\lambda$. Two examples of the application of the method are given assuming $F(\vartheta)$ as for a half-wave radiator and as a cardioid and proving that the antenna length is $\lambda/2$ or $\lambda/4$, respectively. There are 1 figure and 12 Soviet-bloc references.

SUBMITTED: April 17, 1961

Card 3/3

L 26960-65 EWT(l)/EEC-4/EEC(t)/EEC(b)-2/FCS(k) Pac-4/Pae-2/Pi-4/Pj-4/Pl-4
ACCESSION NR: AT5003919 WR S/2529/63/000/073/0003/0017

40
31
B+1

AUTHOR: Popovkin, V. I. (Docent)

TITLE: Concerning one method of antenna current calculation

SOURCE: Kazan. Aviatsionnyy institut. Trudy, no. 73, 1963. Radiotekhnika i elektronika (Radio engineering and electronics), 3-17

TOPIC TAGS: antenna theory, array design, dipole antenna

25B

ABSTRACT: The article describes a general method for calculating currents in an antenna array in which the exact functional equation for the boundary-value problem of electrodynamics is replaced by an approximate equation, the solution of which is obtained in the form of an operator polynomial of a function that reflects the main features of the distribution of the currents on the surfaces of metallic bodies of arbitrary shape. The successive approximations are determined by the form of the equation of the electrodynamic problem under consideration, thus ensuring sufficiently rapid convergence of the approximate solution to the exact one. Calculations for an antenna with a reflector and for the excitation

Card 1/2

L 26960-65

ACCESSION NR: AT5003919

of a tubular antenna with cylindrical tubular dipoles are used as examples to illustrate the method, with the electrodynamic equations expressed in integro-differential linear operator form. The method can be readily extended to include an arbitrary number of dipoles. Orig. art. has: 41 formulas and 1 figure.

ASSOCIATION: Kazanskiy aviatsionnyy institut (Kazan' Aviation Institute)

SUBMITTED: 24Dec61 ENCL: 00 SUB CODE: EC

NR REF SOV: 019 OTHER: 000

Card 2/2

L 62245-65 EWT(1)/EWT(m)/EEC-4/T/FCS(k) WR

ACCESSION NR: AR5004625 S/0274/64/000/011/A055/A055
621.396.67

SOURCE: Ref. sh. Radiotekhn. i elektrosvyaz'. Sv. t., Abs. 11A297

AUTHOR: Popovkin, V. I.

TITLE: Synthesizing a discrete-radiator linear system from a specified directional pattern

CITED SOURCE: Tr. Kazansk. aviats. in-ta, vyp. 82, 1964, 67-79

TOPIC TAGS: antenna, antenna theory

TRANSLATION: A new method is suggested of synthesizing a finite-length discrete antenna on the basis of a specified directional pattern which, in the general case, cannot be exactly materialized. The method permits determining rather simply the complex current (field) amplitude, with any number of radiators, as residues of a meromorphic function at certain points of location of the radiators. The numerator of this function is connected with the specified antenna directional pattern through an integral transformation. Engineering formulas for the currents of a finite-length discrete antenna with a known radiator arrangement have been

Card 1/2

L 62245-65

ACCESSION NR: AR5004625

developed by this method. An inequality has been derived which can serve to determine (with a known approximation to the directional pattern) the necessary number of antenna radiators by a trigonometric polynomial. The accuracy of approximation increases with the number of radiators. Bibliography: 11 titles.

SUB CODE: EC ENCL: 00

Card 2/2 dap

L 24252-66 EWT(1)/T WR

ACC NR: AR6005257 SOURCE CODE: UR/0058/65/000/009/H034/H035

39
B

AUTHOR: Popovkin, V. I.

TITLE: Synthesis of curvilinear radiator for a specified directivity pattern

25 13

SOURCE: Ref. zh. Fizika, Abs. 9Zh240

REF SOURCE: Tr. Kazansk. aviats. in-ta, vyp. 85, 1964, 3-10

TOPIC TAGS: antenna array, antenna component, antenna directivity, antenna synthesis, antenna radiation pattern

TRANSLATION: The author presents the solution of the problem of the synthesis of a flat curvilinear radiator, based on the study of the properties of a set of singular points of analytic functions, which is connected by the Borel integral transformation with a specified directivity pattern -- an entire function of finite degree. It is shown that the form and the type of the antenna are determined by the arrangement and character of the singular points of the Borel-association function, and the law of distribution of the radiators is determined by the behavior of this function on the set of its singular points. Problems of the synthesis of a curvilinear antenna with discrete and continuous distribution of sources are discussed, and conditions for their solvability are formulated.

SUB CODE: 20

2

Card 1/1 dda

L 24253-66 EWT(1)/T WR

ACC NR: AR6005258 SOURCE CODE: UR/0058/65/000/009/H035/H035

AUTHOR: Popovkin, V. I.

TITLE: Construction of a linear antenna in accord with a specified directivity pattern

SOURCE: Ref. zh. Fizika, Abs. 9Zh241

REF SOURCE: Tr. Kazansk. aviats. in-ta, vyp. 85, 1964, 130-134

TOPIC TAGS: antenna synthesis, antenna array, antenna directivity, antenna radiation pattern, dipole antenna

TRANSLATION: The synthesis of a linear antenna (A) with discrete or continuous distribution of the sources is described by a single equation, using the Stieltjes integral. Expressing the complex multiplier of the directivity pattern of the antenna by an integral representation of an entire function of finite power with the aid of the Borel-associated function, it is possible to determine the type of the antenna by the character of the singular points of the integrand, and the distribution of the dipoles over the length A can be determined by the behavior of this function on the set of its singular points. For a continuous distribution the method yields the same results as the method of the Fourier integral. Two examples of the application of the method are considered. Bibliography, 14 titles. I. Dombrovskiy.

SUB CODE: 09, 20

Card 1/1 dda

L 02409-67 EWT(1)/T WR/GD

ACC NR: AT6022330 SOURCE CODE: UR/0000/66/000/000/0003/0008

AUTHOR: Yelumeyev, V. I.; Popovkin, V. I.

42
B+1

ORG: None

TITLE: Synthesis of linear arrays and some problems in uniform approximation of a given directional pattern in the region of real angles

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya antennykh ustroystv. Doklady. Moscow, 1966, 3-8

TOPIC TAGS: antenna directivity, antenna radiation pattern, antenna array

ABSTRACT: The authors consider synthesis of a discrete antenna of electrical length $2a$ with a complex factor

$$F_a(u) = \sum_{|x_k| < a} C_k e^{iux_k}.$$

which uniformly approximates a given directional pattern $G(u)$; $-1 < u \leqslant 1$, as $a \to \infty$. In this expression, the numbers C_k designate the complex amplitudes of the sources while the numbers x_k indicate their coordinates. Some problems

Card 1/2

Card 2/2

L 42168-66 EWT(1)/EWT(m)/T WR/JD

ACC NR: AR6013871 SOURCE CODE: UR/0274/65/000/011/A044/A044

51
B

AUTHOR: Popovkin, V. I.

25B

TITLE: The construction of a linear antenna according to a specified directional pattern

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 11A339

REF SOURCE: Tr. Kazansk. aviats. in-ta, vyp. 85, 1964, 130-134

TOPIC TAGS: antenna theory, antenna synthesis, antenna radiation pattern, antenna engineering, antenna directivity, antenna configuration, integral equation, integral function

ABSTRACT: The design of a linear antenna with discrete and continuous distribution of the sources is described by a single equation with the use of a Stieltjes integral. Expressing the complex factor of the directional pattern of the antenna by an integral representation of an entire function of finite degree with the help of an associated Borel function, it is possible to determine the character of singular points of the integrand expression for a type of linear antenna. The distribution law of the radiation along the length of the linear antenna is determined by the behavior of this function in a set of its singular points. For the continuous distribution, the method gives the same results as the Fourier integral method. Two examples of the use of the method were investigated. Bibliography of 14 citations. I. D. [Translation of abstract]

SUB CODE: 09, 12

UDC: 621.396.671.8

Card 1/1

L 28517-66 EWT(1)/T WR

ACC NR: AT6005742 SOURCE CODE: UR/2529/64/000/082/0067/0079

AUTHOR: Popovkin, V. I. 40 B+1

ORG: none

TITLE: Synthesizing linear systems of discrete radiators based on a specified directional pattern [Reported at the NTORiE Conferences in Moscow, 14 May 58 and 8 May 63]

SOURCE: Kazan. Aviatsionnyy institut. Trudy, no. 82, 1964. Radiotekhnika i elektronika (Radio engineering and electronics), 67-79

TOPIC TAGS: antenna, antenna directional pattern, antenna synthesis, continuous function

ABSTRACT: The only method of synthesizing a linear antenna with discrete radiators (suggested by A. A. Pistol'kors, Izv. el. prom. slab. toka, 1, 1939, 9-19; and "Antennas," Svyaz'izdat, 1947) known to the author has these shortcomings: (a) with a great number of radiators, the system of algebraic equations involved becomes too cumbersome and (b) the variation of the source-distribution

Card 1/2

function is not limited. Hence, a different method is offered which permits determining complex current (of field) amplitudes as residues of a certain meromorphic function in the known points of deployment of the sources, the function numerator being connected by an integral transformation with the specified directional pattern. The variation of the distribution function takes on a minimum value equal to the norm of the specified directional pattern in the continuous-function space. Synthesizing the antenna on the basis of a specified continuous function $G(\theta), -\frac{\pi}{2} \leqslant \theta \leqslant \frac{\pi}{2}$ is reduced to setting up a finite-degree integer function $F_a(\theta)$ which, within $-\frac{\pi}{2} \leqslant \theta \leqslant \frac{\pi}{2}$, approximates the specified function with required accuracy. It is shown that the accuracy of approximation increases with the number of radiators; a formula is developed which connects these two quantities. Orig. art. has: 38 formulas.

SUB CODE: 09 / SUBM DATE: 15Oct63 / ORIG REF: 011

OSTROVSKIY, M.I.; POPOVIN, V.V.

Basic features of the geological development of the southwestern regions of the Udmurtskaya A.S.S.R. in connection with the oil potential of the terrigenous Devonian. Geol. i geofiz. no.5: 20-24 '64. (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'dkiy geologorazvedochnyy neftyanoy institut.

POPOVIN, V.V.

Dislocation with a break in continuity in the Tatar Arch.
Geol. nefti i gaza 7 no.12:26-29 D '63. (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut, Moskva.

POPOVKIN, YE. M.

POPOVKIN, YE. M. -- "Innervation of Human Lungs."*(Dissertations For Degrees In Science and Engineering Defended At USSR Higher Educational Institutions)(30) Odessa State Medical Inst imeni N. I. Pirogov, Odessa, 1954

SO: KNIZHNAYA LETOPIS' No 30, 23 July 1955

* Foe the Degree of Candidate of Medical Sciences.

VOLYNSKIY, F.A.; POPOVKIN, Ye.M.; MAKARENKO, I.V.; PAVLOVA, A.I.; SHEVCHUK, P.Ye.; KATKHE, V.L.

Profound study of afferent (spinal) innervation of the internal organs. Arkh. anat., gist. i embr. 47 no.12:64-76 D '64. (MIRA 18:4)

1. Kafedra normal'noy anatomii (zav. - zasluzhennyy deyatel' nauki prof. F.A.Volynskiy) Odesskogo gosudarstvennogo meditsinskogo instituta imeni Pirogova.

SOV/137-58-7-14225

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 38 (USSR)

AUTHORS: Okunev, A.I., Popovkina, A.A.

TITLE: Analysis of Some Methods of Oxidation of Sulfides (Analiz nekotorykh skhem okisleniya sul'fidov)

PERIODICAL: Tr. i materialy. Ural'skiy n.-i. i proyektn. in-t medn. prom-sti, 1957, Nr 2, pp 373-380

ABSTRACT: Two methods of oxidation of sulfides were examined: Method A which includes the oxidation of the metal (M) produced during the interaction of MSO_4 and MS, and method B which takes into account a direct decomposition of MSO_4 to the oxide. A comparison of calculations according to these methods is cited, with experimental data obtained from the oxidation of a series of sulfides (Fe, Zn, and Cu). It is remarked that method A is insufficient because even in the case of Cu the interaction of MSO_4 and MS terminates with the oxide, while a reduction to the metal is not possible. Method B likewise is contrary to the experimental data in a number of cases and requires further study.

L.P.

1. Metal sulfides--Oxidation

Card 1/1

Popovkina, A. k.

4

Sulfide oxidation kinetics. A. I. Okunev, N. P. Diev, and A. L. Popovkina. *Doklady Akad. Nauk S.S.S.R.* 103, 857-60(1955). ZnS was oxidized in a porcelain boat in a gas stream contg. between 21% O (air) and 100% O. Three oxidation types were clearly observed, (1) kinetic at < 600°, (2) transitional at 600–700°, and (3) diffusional at > 800°. Surface combustion starts during type 2, and the apparent activation energy varies between 3000 cal./mol. in type 1, through 25,000 cal./mol. in type 2, to 49,000 cal./mol. in type 3. The kinetic combustion rate is affected by the ZnS particle size, the proportion of O in the gas, and the gas flow rate. The effect of the O partial pressure during diffusional combustion shows that the reaction is unimol. W. M. S.

CH

(2)

SOV/137-58-9-18438

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 36 (USSR)

AUTHORS: Okunev, A. I., Popovkina, L. A.

TITLE: On the Conditions Under Which Various Processes of the Oxidation of Sulfides Can Be Put Into Practice (Ob usloviyakh realizatsii razlichnykh rezhimov pri okislenii sul'fidov)

PERIODICAL: Tr. i materialy. Ural'skiy n.-i. i proyektn. in-t medn. prom-sti, 1957, Nr 2, pp 275-279

ABSTRACT: On the basis of the analysis of bibliographical data and the investigations of the Unipromed' institute, the activation energies (AE) of the processes of oxidation of sulfides with evolution of SO_2 were established and the temperature limits for the realization of kinetic and diffusion processes were approximately identified. The apparent activations of the processes of interaction of metallic sulfates with metallic sulfides and of metallic oxides with metallic sulfides were calculated. It is noted that the AE values for the process of oxidation of metallic sulfides and the interaction of metallic sulfides with metallic sulfates coincide in the first approximation. It was found that the process of oxidation of metallic sulfides with an evolution of SO_2 is

Card 1/2

SOV/137-58-9-18438

On the Conditions Under Which Various Processes (cont.)

characterized in the kinetic region by a high value of AE (35000 - 5000 cal/mol). In the diffusion process the AE of the process is 3,000 - 8,000 cal/mol, in the intermediate systems it varies within the limits of 10,000 - 25,000 cal/mol. It was ascertained that in many works devoted to the study of the kinetics and mechanics of the oxidation of sulfides, the diffusion or the intermediate processes but not the kinetic one were actually accomplished.

N. P.

1. Sulfides--Oxidation

Card 2/2

POPOVKINA, L.A.; GOL'DSHTEYN, T.Yu.; ASANOVA, M.P.; OKUNEV, A.I.

Oxidation of covellite. Dokl. AN SSSR 140 no.4:880-883 O '61. (MIRA 14:9)

1. Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut mednoy promyshlennosti. Predstavleno akademikom S.I.Vul'fkovichem.
(Covellite)

CHUDNEV, A.I.; POPOVKINA, L.A.

Conditions for various sulfide oxidation processes. Trudy Unipromedi no.2:275-279 '57. (MIRA 11:11)
(Ore dressing) (Sulfides)

OKUNEV, A.I.; POPOVKINA, L.A.

Analyzing certain sulfide oxidation flowsheets. Trudy Unipromedi (MIRA 11:11)
no.2:373-380 '57.
(Ore dressing) (Sulfides)

Popovkina, L. A.

3

Kinetics of oxidation of sulphides. A. I. Okuncv, N. P. Divev, and L. A. Popovkina (*Doki. Akad. Nauk SSSR*, 1955, 103, 857—860).—The w–T curve (w is mg. of SO_2 evolved per min., T is temp.) for ZnS in a current of air consists of three sections. The first, starting at 70°, corresponds with a purely kinetic reaction phase, for which $w \propto \log T$, and lasts until the kinetic velocity approximates to that of a diffusion process, after which w rises only very slowly as T rises to 1100°. These stages are separated by a narrow transitional period, during which w rises abruptly. The apparent activation energies of the stages are: initial 44, transitional 25, and final 3 kg.-cal./mole. The value of w rises linearly with increasing O_2 content of the air, from 0 to 100%.

R. Truscor.

PM Lead

OKUNEV, A.I.; POPOVKINA, L.A.

Experimental investigation of equilibrium conditions in the case of interaction between the oxide and sulfide of zinc. Dokl.AN SSSR 107 no.1:97-98 Mr '56. (MLRA 9:7)

1.Ural'skiy nauchno-issledovatel'skiy i proyektnyy institut mednoy promyshlennosti.

(Zinc)

POPOVKINA, L. A.

2

Equilibrium conditions in the zinc oxide interaction with zinc sulfide. A. L. Okunev and L. A. Popovkina. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 107, 111-6(1956)(English translation).—See *C.A.* 50, 15182*a*. R. M. R.

Chem

SOV/136-59-5-8/21

AUTHORS: Okunev, A.I., and Popovkina, L.A.

TITLE: Experimental Study of the Process of Sulphide Oxidation by the Continuous Weighing Method (Eksperimental'noye izucheniye protsessa okisleniya sul'fidov termovesovym metodom)

PERIODICAL: Tsvetnyye metally, 1959, Nr 5, pp 38-45 (USSR)

ABSTRACT: The authors state that, in spite of technical importance of the oxidation of sulphides of non-ferrous metals and of iron, the experimental methods so far used for studying the process are defective. Their own experiments were carried out with a spring-type continuous-weighing apparatus (Fig 1), the accuracy of weighing being 0.5 mg and the sample weight 0.2 g. The sample was heated at 6-7 °C per minute while gas was passed downwards over it at 125 ml/min. The exit gas was taken for titration with iodine. The materials studied were natural pyrite, chalcopyrite, chalcosine and pure artificial sulphides of zinc, cadmium and iron. These could be divided into two groups: the first group (pyrite, marcasite and zinc sulphite) practically only lose weight when oxidized; the other gained weight up to a definite temperature and

Card 1/5

then lost weight. The loss is attributed to sulphur dioxide evolution, the gain to formation of oxides and sulphates. Fig 2 shows the curves for the oxidation of iron sulphide (63.74% Fe, 36.3% S), indicating a gain in weight up to 400 °C, evolution of SO_2 starting at a higher temperature. Fig 2 also shows curves for other reactions involved in the process. The authors note that the SO_2-evolution temperature is a function of the experimental conditions. The curves for natural pyrites (45.95% Fe, 51.22% S, 0.11% Cu, 0.08% Pb, traces of Zn) are shown in Fig 3. The absence of weight-gain here is attributed to the formation of sulphates which prevent further oxidation. Table 1 gives a comparison of the weight losses with the corresponding quantities of sulphur evolved as SO_2 for temperatures in the range 500-575 °C, good agreement being evident at the lower temperatures, while at 550° and over the sulphur evolved as SO_2 exceeds the weight loss. The results of experiments with continually rising temperature were confirmed by a series in which pyrite was oxidized under isothermal conditions

Experimental Study of the Process of Sulphide Oxidation by the Continuous Weighing Method

(Fig 4 and Table 2). With zinc sulphide (67.6% Zn, 31.8%S) dissociation of the zinc sulphate begins much later than oxidation of sulphide; the reaction of sulphide with sulphate was found to start at about the same time as its oxidation (Fig 5). Cadmium sulphide (78.2% Cd, 21.1% S) was oxidized by air with very little evolution of SO_2: rapid gain in weight occurred (Fig 6) and the authors indicate the incorrectness of statements in the literature (based on measurement of sulphur dioxide evolution) that cadmium sulphide is hardly oxidized. Dissociation of cadmium sulphate begins at over 700 °C while its reaction with the sulphide proceeds at over 650 °C. The most complicated curves (Fig 7) were obtained with natural chalcopyrite (29.47% Cu, 28.30% Fe, 31.25% S). The authors divide them into four zones for discussion. The first is characterized by a practically constant sample weight (simultaneous formation of sulphate and evolution of sulphur dioxide). In the second zone there is rapid loss in weight (due both to oxidation and the sulphide-sulphate reaction).

Experimental Study of the Process of Sulphide Oxidation by the Continuous Weighing Method

Little evolution of SO_2 and rapid increase in weight characterise the third zone; while in the fourth there is increased evolution and a rapid decrease in weight. The curves (Fig 8) representing the oxidation of cuprous sulphide are divided into five zones for discussion. In the first, little change occurs, while in the second the sample weight increases rapidly and there is no sulphur-dioxide evolution. The third zone corresponds to rapid evolution and weight decrease (with reaction of copper sulphide with copper sulphate as well as oxidation). In the fourth zone there is practically no SO_2 evolution and oxidation of cuprous to cupric oxide and of residual sulphide occur, leading to slight weight-increase. Dissociation of copper sulphate gives a rapid weight decrease in the fifth zone (above 750-770 °C). The authors state that the detailed information they have been able to obtain shows the effectiveness of the

Experimental Study of the Process of Sulphide Oxidation by the Continuous Weighing Method

continuous-weighing method and recommend its use in other fields especially in combination with other methods.
There are 8 figures, 2 tables and 3 references, of which 1 is Soviet and 2 are English.

POPOVKINA, O.A.

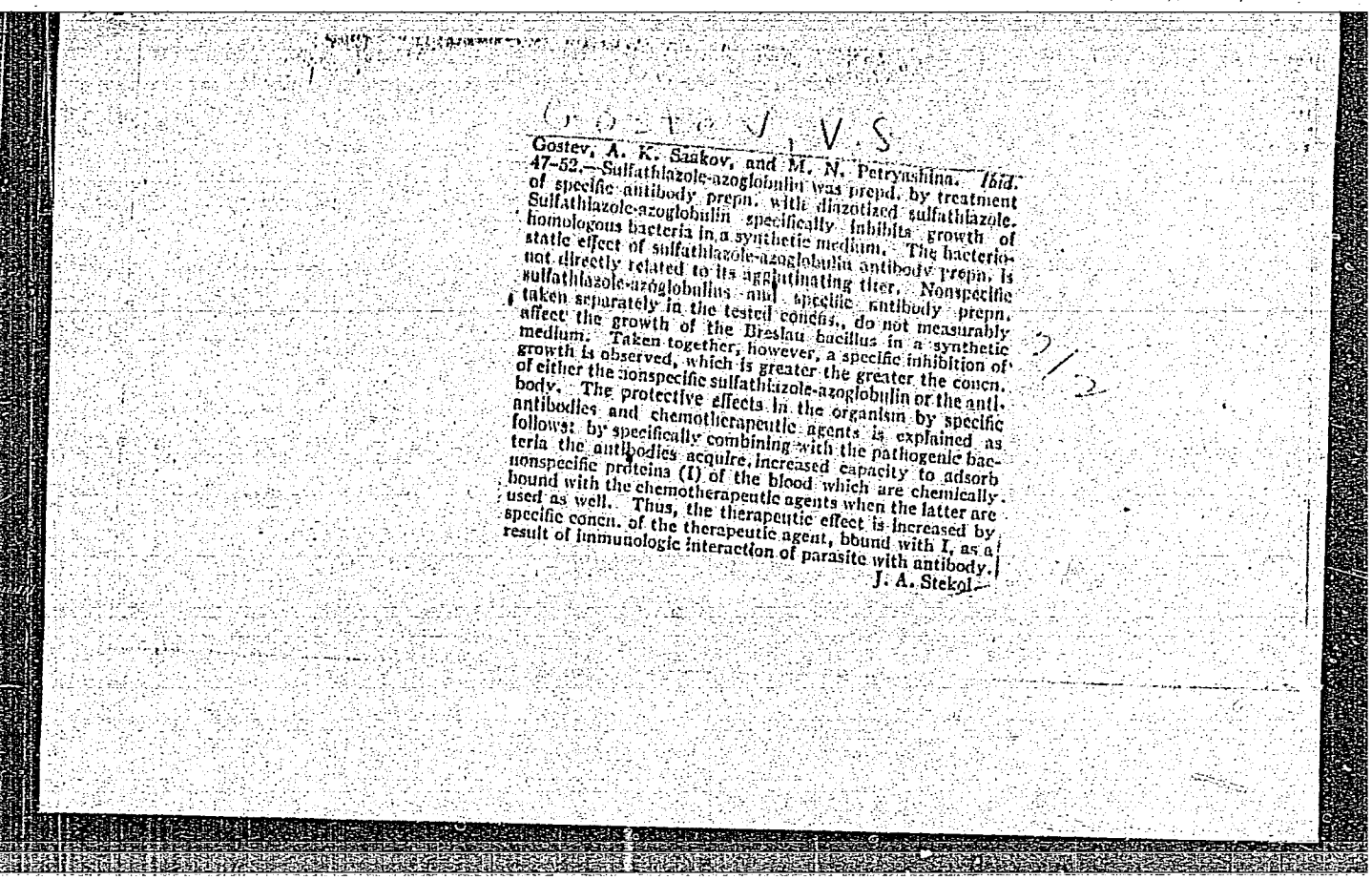
USSR

Nonspecific adsorption of proteins by a specific complex, antigen-antibody. III. Determination by nitrogen analysis of binding of nonspecific proteins by agglutination. V. S. Gostev, O. A. Popovkina, and A. K. Saakov. *Zhur. Mikrobiol., Epidemiol. i Immunobiol.* 1953, No. 9, 39–47; cf. *C.A.* 47, 8223*h*.—The extent of adsorption of nonspecific proteins (I) by agglutinating bacteria is detd. by the activity of the antibody prepn. The higher the agglutinating power of the antibody the greater is the extent of adsorption of I in the agglutination. No binding of I occurs in the absence of specific antibodies. Heating the antibody prepn. at 56° for 60 min. destroys the ability of the specific antibody to adsorb I; the titer of the antibody, however, is not diminished by this treatment. The increase in N content of bacteria on addn. of a specific antibody prepn. is accounted for not only by the specific antibody but by I as well. The N content of the agglutinins is not a measure of the abs. amt. of antibodies, but is a measure of the capacity of the agglutinins to increase the adsorption of I and, in part, the complement. IV. Antibacterial action of sulfathiazole-globulins in the presence of specific antibodies. V. S.

(over)

1/2

Inst. Epidemiol & Microbiol. im Gamaleya, AMS USSR



GOSTEV, V. S.

Gostev, A. K. Saakov, and M. N. Petryashina. *Ibid.* 47–52.—Sulfathiazole-azoglobulin was prepd. by treatment of specific antibody prepn. with diazotized sulfathiazole. Sulfathiazole-azoglobulin specifically inhibits growth of homologous bacteria in a synthetic medium. The bacteriostatic effect of sulfathiazole-azoglobulin antibody prepn. is not directly related to its agglutinating titer. Nonspecific sulfathiazole-azoglobulins and specific antibody prepn. taken separately in the tested concns., do not measurably affect the growth of the Breslau bacillus in a synthetic medium. Taken together, however, a specific inhibition of growth is observed, which is greater the greater the concn. of either the nonspecific sulfathiazole-azoglobulin or the antibody. The protective effects in the organism by specific antibodies and chemotherapeutic agents is explained as follows: by specifically combining with the pathogenic bacteria the antibodies acquire increased capacity to adsorb nonspecific proteins (I) of the blood which are chemically bound with the chemotherapeutic agents when the latter are used as well. Thus, the therapeutic effect is increased by specific concn. of the therapeutic agent, bound with I, as a result of immunologic interaction of parasite with antibody.

J. A. Stekol—

POPOVKINA, Ritta Aleksandrovna; SHILTOVA, Alla Petrovna; LIVSHITS, Ya.L., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[Cambodia] Kambodzha. Moskva, Izd-vo "Znanie," 1958. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.7, no.17). (MIRA 11:9)
(Cambodia)

POPOVKINA, R. V.

Zotkin,I.I., Evduk, R.A. I Popovkina, R.V.

33866. Vyenyera V 1948 Godu. Byullyetyen', Vsyesoyuz. Astron. - Gyeodyez. O-va, No 7, 1949. C. 17-21. Bibliogr: 8 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 46, Moskva, 1949.

AFANAS'YEV, Sergey Gavrilovich; POPOVKO, V.K., redaktor; ROZENTSVEYG, Ya.D., redaktor izdatel'stva; EVERSON, I.M., tekhnicheskiy redaktor

[Studies in the Bessemer process] Issledovanie bessemerovskogo protsessa. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 109 p. (MLRA 10:3)
(Bessemer process)

VESELOVSKIY, A.P., inzh.; POPOVNIN, M.G., inzh.

Increase of the life of the insulating oil of small electric power transformers. Prom.energ. 17 no.5:12-13 My '62. (MIRA 15:5)
(Electric transformers) (Insulating oils)

VESELOVSKIY, A.P., inzh.; POPOVNIN, M.G., inzh.

For maximum economy of oils. Energetik 8 no.11:3-9 N '60.
(MIRA 13:12)

(Insulating oils) (Electric transformers)

BIDA, Ye.M., inzh.; IVLEYEV, A.P., inzh.; VESELOVSKIY, A.P., inzh.; POPOVNIN, M.G., inzh.

Use of transformer insulating oils in a municipal electric power distribution network. Elek. sta. 35 no.11:60-63 N '64. (MIRA 18:1)

1. Sverdlovskaya gorodskaya elektroset' (for Bida). 2. Kuybyshevenergo (for Ivleyev). 3. Ivanovskaya kabel'naya set' (for Veselovskiy, Popovin).

NOVIKOV, A.I., inzh. (Moskva); GUBAREV, M.I.; POPOVNINA, N.I.; BURD, V.S.; SUDIT, Zh.M.

New sprayers. Zashch. rast. ot vred. i bol. 6 no.7:25-26 Jl '61. (MIRA 16:5)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro L'vovskogo soveta narodnogo khozyaystva.

(Spraying and dusting equipment)

PROKOPENKO, S.F.; PETRUKHA, Ye.I.; POPOVNINA, N.I.; KOBYLKO, B.G.

Low-volume surface spraying of sugar beet and pea fields. Zashch. rast. ot vred. i bol. 8 no.1:28-29 Ja '63. (MIRA 16:5)
(Spraying and dusting in agriculture)

POPOVOY, I.F., SHUR, S.S., ARTEMYEV, D.YE., BELYAKOV, N.N., BURGSDORF, V.V., LYSAKOVSKIY, G.I.

"Internal overvoltage levels in the 110-220,000 V systems."

Report to be submitted for the 19th Biennial Session, Intl. Conference on Large Electric System (CIGRE), Paris, France, 16-26 May '62.

ARTEMYEV, Scientific Research Inst. of Direct Current, Leningrad
BELYSKOV, All-Union Scientific Research Inst. Electric Power
BURGSDORF, Central Scientific Research Elect. Engineering Lab., Min. Elect. Power Stations, USSR
POPOVOY, none given
Shur, Scientific Research Inst. of Direct Current, Leningrad

VOTINTSEV, K.K.; POPOVSKAYA, G.I.

Melosira production in Lake Baikal. Dokl. AN SSSR 163 no.6:1491-1494 Ag '65. (MIRA 18:8)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR. Submitted November 12, 1964.

POPOVSKAYA, G.I.

Phytoplankton of Proval Gulf, Lake Baikal. Izv.Sib.otd.AN SSSR no.9: 145-156 '60. (MIRA 13:11)

1. Baykal'skaya limnologicheskaya stantsiya Vostochno-Sibirskogo filiala Sibirskogo otdeleniya AN SSSR.
(Baikal, Lake--Phytoplankton)

VOTINTSEV, K.K.; POPOVSKAYA, G.I.

Biolimnological characteristics of northern Lake Baikal. Dokl. AN SSSR 156 no. 5:1193-1196 Je '64. (MIRA 17:6)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom Ye.N.Pavlovskim.

POPOVSKAYA, G.I.

Development of Melosira distans subsp. alpigena (Grun.) Skabitsch. in Lake Baikal. Bot. zhur. 48 no.7:1034-1037 Jl '63.
(MIRA 16:9)

1. Vostochno-Sibirskiy filial AN SSSR i Baykal'skaya limnologicheskaya stantsiya, selo Listvenichnoye Irkutskoy oblasti.
(Baikal, Lake--Diatoms)

[illegible]POVSKAYA, G.I.

Phytoplankton of the [illegible]ol'sk and Istok Bayous of Lake Baikal. Izv. Sib. otd. AN SSSR no.9:104-116 '61. (MIRA 14:10)

1. Baykal'skaya limnologicheskaya stantsiya Sibirskogo otdeleniya AN SSSR.
(Selenga Delta region--Phytoplankton)

VOTINTSEV, K.K.; POPOVSKAYA, G.I.

State of Melosira baicalensis (K.Meyer) Wisl. sinking to the deep strata of Lake Baikal. Dokl. AN SSSR 155 no.3:673-676 Mr '64. (MIRA 17:5)

1. Predstavleno akademikom Ye.N. Pavlovskim.

POPOVSKAYA, G.I.; VOTINTSEV, K.K.

Biological runoff of the Selenga River and its role in the life of Selenga shallow waters of Lake Baikal. Dokl. AN SSSR 158 no.1:208-211 S-O '64 (MIRA 17:8)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom Ye.N. Pavlovskim.

VOTINTSEV, Konstantin Konstantinovich; POPOVSKAYA, Galina Ivanovna; MAZEPOVA, Galina Fedorovna; GALAZIY, G.I., otv. red.; REZNICHENKO, O.G., red. izd-va; POLYAKOVA, T.V., tekhn. red.

[Physicochemical regime and plankton life of the Selenga region in Lake Baikal.] Fiziko-khimicheskii rezhim i zhizn' planktona Selenginskogo raiona ozera Baikal. Moskva, Izd-vo Akad. nauk SSSR. 1963. 320 p. (Akademiia nauk SSSR. Sibirskoe otdelenie. Limnologicheskii institut. Trudy, vol. 97)

MALKOV, A.M.; POPOVSKAYA, N.A.

Bactericidal action of quinhydrone in the cultivation of yeasts. Izv.vys.ucheb.zav.; pishch.tekh. no.3:65-69 '59. (MIRA 12:12)

1. Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti. Kafedra brodil'nykh proizvodstv.
(Yeast) (Quinhydrone)

L 08100-67 EWT(m) DJ
ACC NR: AP6029983 SOURCE CODE: UR/0413/66/000/015/0194/0194

INVENTOR: Morgunov, G. M.; Vedernikov, V. V.; Grachev, V. I.; Popovkin, N. A.

ORG: none

TITLE: Hydraulic-system actuating cylinder with two divided working chambers. Class 62, No. 184140

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 194

TOPIC TAGS: hydraulic equipment, hydraulic engineering, actuating cylinder

ABSTRACT: An Author Certificate has been issued for a hydraulic-system actuating cylinder with two divided working chambers containing pistons with rods. In order to make it possible to operate on two independent systems and to decrease the cylinder's length, its outer-chamber piston rod consists of two concentric tubes. The rod's inner tube is also the inner working chamber, the piston rod of which is firmly fastened in the body of the outer chamber; in the inner chamber's piston rod are channels for the supply and discharge of the working fluid, and in the outer chamber's piston are drainage channels connected with the atmosphere through a space between the rod's tubes. To simplify the design for operation on one system and to simultaneously increase the force on the rod, the outer-chamber piston rod is made of one duct and in its wall next to the piston is a hole connecting the working chambers. [KT]

SUB CODE: 13/ SUBM DATE: 26Apr65/

UDC: 629.13.014. 69.621.222

Card 1/1

ACC NR: AP6029962 (A, N) SOURCE CODE: UR/0413/66/000/015/0193/0193

INVENTORS: Vedernikov, V. V.; Grachev, V. I.; Popovkin, N. A.

ORG: none

TITLE: Polychambered power cylinder. Class 62, 184139

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 193

TOPIC TAGS: hydraulic device, hydraulic engineering, engine cylinder, aircraft

ABSTRACT: This Author Certificate presents a polychambered power cylinder for hydraulic systems of driving flying machines. The cylinder consists of a casing and of pistons with stiffeners, rods, and a main line which drive the working body from the distributing system (see Fig. 1). To secure the proper operation of this apparatus, the hollow in the cylinder casing has concentric walls that form parallel working chambers connected to the distributor of the working liquid. The piston rods of the working chambers are combined into one main rod carrying the total power to

Card 1/2 UDC: 629.135.138 621.83

L 09263-67

ACC NR: AP6029982

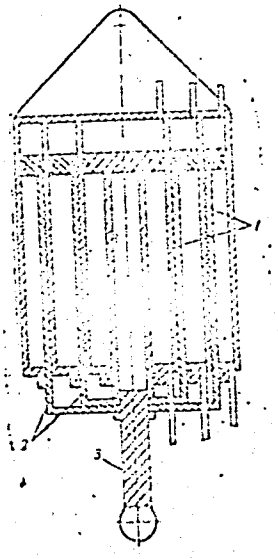


Fig. 1. 1 - walls; 2 - piston rods of the working chambers; 3 - main rod

the driving organ. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 06Feb65

POPOVSKAYA, A. Ya., starshiy tovaroved; TOLMATSKIY, I.M., starshiy master

Variety of electric home appliances. Vest.elektroprom. 31 no.1:4-7 Ja '60. (MIRA 13:5)

1. Starshiy tovaroved Gosudarstvennogo universial'nogo magazina (for Popovskaya). 2. Starshiy master Gosudarstvennogo universal'nogo magazina (for Tolmatskiy).
(Household appliances, Electric)

POPOVSKAYA, G. I.

Phytoplankton of branches of the Selenga River. Izv.Sib.otd.AN SSSR no.3:71-80 '60. (MIRA 13:10)

1. Baykal'skaya limnologicheskaya stantsiya Vostochno-Sibirskogo filiala Sibirskogo otdeleniya AN SSSR.
(Selenga River—Phytoplankton)

POPOVSKAYA, G.I.

Phytoplankton of the Selenga shoals and the adjacent open areas of lake Baikal. Izv. Sib. otd. AN SSSR no.10:110-129 '61. (MIRA 14:12)

1. Limnologicheskiy institut Sibirskogo otdeleniya AN SSSR, s. Listvenichnoye Irkutskoy oblasti.
(Selenga Delta region--Phytoplankton)

POKROVSKAYA, I.V., GEKHT, I.I., VILESHINA, T.L.

Tetradymite in the trans-Ili Ala-Tau. Izv. AN Kazakh. SSR. Ser. geol. no.1:117-119 '60. (MIRA 13:8)
(Trans-Ili Ala-Tau--Tetradymite)

POPOVSKAYA, N. P.

The reaction of the nitrates and nitrites of the metals from the first and second groups of the periodic system. VI. The ternary system rubidium nitrate-potassium nitrate-cadmium nitrate. P. I. Protsenko and N. P. Popovskaya (Rostov State Univ.). *Zhur. Obshchei Khim.* 23, 1240-4 (1953); cf. *C.A.* 48, 4954b.—$RbNO_3$ reacts with $Cd(NO_3)_2$ in fusions to form $Cd(NO_3)_2.2RbNO_3$, m. 184°, less stable to heat than is $Cd(NO_3)_2.2KNO_3$. The liquidus surface of the system $RbNO_3$-$Cd(NO_3)_2$-KNO_3 shows that the above compds. are formed in the field of crystn. within the ternary system. From the nature of this field it is proposed that these compds. are isomorphic. J. Rovtar Leach

POPOVSKAYA, N.F.

USSR/Chemistry

Card 1/1 Pub. 151 - 3/29

Authors : Popovskaya, N. F., and Protsenko, P. I.

Title : Reaction of nitrates of metals belonging to the first group of the D. I. Mendeleyev periodical system with cadmium nitrates in fusions. Part I.- Electrical conductivity of binary systems.

Periodical : Zhur. ob. khim. 24/2, 207-211, Feb 1954

Abstract : Experimental data on the specific electrical conductivity and numerical values of absolute and relative thermal coefficients are presented for two binary Li NO_3-$Cd(NO_3)_2$ and $NaNO_3$-$Cd(NO_3)_2$ systems the structural diagrams of which were obtained by a visual-polythermal method. The absence of a chemical affinity in the fusions between $Cd(NO_3)_2$ and $LiNO_3$ and $NaNO_3$ was established on the basis of the structural diagrams. It was established that the electrical conductivity increases from the less conductive in fusion $Cd(NO_3)_2$ toward the more conductive lithium and sodium nitrates. Nine references: 8-USSR and 1-German (1920-1952). Tables; graphs.

Institution : The V. M. Molotov State University, Rostov/Don

Submitted : September 15, 1953

POPOVSKAYA, N.P.

PROTSENKO, P.I.; POPOVSKAYA, N.P.

Interaction in melts of nitrates and nitrites of metals from the first and second groups of D.I.Mendeleev's periodic system. Part 13. Electrical conductivity of binary systems: cesium nitrate-cadmium nitrate, thallium nitrate-cadmium nitrate, and potassium nitrate-rubidium nitrate. Zhur.ob.khim.24 no.12:2119-2126 D '54. (MLRA 8:3)

1. Rostovskiy gosudarstvennyy universitet.
(Nitrates) (Electric conductivity)

POPOVSKAYA, N.P.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 16/27

Authors : Protsenko, P.I., and Popovskaya, N.P.

Title : Electrical conductivity of binary systems

Periodical : Zhur. fiz. khim. 28/2, 299-304, Feb 1954

Abstract : The specific electrical conductivity was measured for the following binary systems: $Cd(NO_3)_2$ - KNO_3, $Cd(NO_3)_2$ - $RbNO_3$ and $Cd(NO_3)_2$ - $AgNO_3$ and the absolute and relative thermal coefficients were calculated. The results obtained led to the assumption that all chemical compounds of the binary salt type when reaching the melting point or higher decompose into component molecules and dissociate into ions. The chemism of these binary compounds is discussed. Eight USSR references (1931-1954). Tables; diagrams.

Institution : The V.M. Molotov State University, Rostov

Submitted : April 25, 1953

POPOVSKAYA, N. P.

POPOVSKAYA, N. P. -- "On the Interaction of Cadmium Nitrate with the Nitrates of Monovalent Metals in a Fused State." Rostov State U imeni V. M. Molotov. Chair of General and Inorganic Chemistry. Rostov na Donu, 1955. (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Knizhnaya Letopis', No 1, 1956, pp 102-122, 124

POPOVSKAYA, N.P.; PROTSENKO, P.I.

Specific weights and molecular volumes of binary systems: nitrates of potassium — cadmium, and of silver — cadmium. Zhur.fiz.khim. 29 no.2:225-230 F '55. (MLRA 8:7)

1. Gosudarstvennyy universitet imeni V.M. Molotova, Rostov na Donu.
(Systems (Chemistry)) (Nitrates)

PROTSENKO, P.I.; POPOVSKAYA, N.P.

Oxidizing and nitriding special steels in nitrate-nitrite atmospheres. Nauch.dokl.vys.shkoly; met. no.1:244-249 '59. (MIRA 12:5)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.
(Case hardening) (Metallic films)

18(3)
AUTHORS: Protsenko, P. I., Popovskaya, N. P. SOV/163-59-1-47/50

TITLE: Oxidation and Nitriding of Alloy Steel in Nitrate-Nitrite Media (Oksidirovaniye i azotirovaniye spetsial'nykh staley v nitrat-nitritnykh sredakh)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 244-249 (USSR)

ABSTRACT: M. S. Smovt, G. G. Sergiyenko, and L. Ye. Kal'naya assisted in this investigation. The authors had the idea of using baths of molten salts, the components of which would be the source material for atomic nitrogen and oxygen. In this article the problem is investigated whether it is possible to oxidize and nitride steels simultaneously by a treatment in melts of nitrate-nitrite components. The influence exercised by such mixtures upon the surface properties of alloy steels is determined. For this purpose hardened and not treated samples of alloy steels KhVG, R9 and R18 were ground, polished, degreased and then treated thermochemically in salt melts in a metal crucible. The composition of the charge as a rule corresponded to binary and ternary eutectics. The thermochemical treatment varied with the temperature, the halting time, the salt composition of the bath and the type of tool steel. The temperature regimen was

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Oxidation and Nitriding of Alloy Steel in Nitrate-Nitrite Media

prescribed by the central laboratory of the "Rostsel'mash" Works and complied with the conditions for the drawing of tool steel: 220 - 240° and 540 - 560°. The samples were kept in the salt melts from 1 to 8 hours, they were then washed, dried, and tested as to microhardness and corrosion resistance. The experiments lead to the following statements: Protective layers with extreme hardness and high corrosion resistance are produced on samples of alloy steels in molten nitrate-nitrite media. The microhardness of the surface layers of samples which had been treated by such a process increases by 38 - 100 % as compared to samples not treated. In the thermochemical treatment of tool steel samples in nitrate-nitrite melts of salts of the alkali- and alkaline-earth metals apart from the protective oxide layers also nitride-phases of an indeterminate composition are produced at drawing temperatures. This means that oxidation and nitriding proceed simultaneously.- There are 5 figures, 3 tables, and 8 references, 7 of which are Soviet.

SOV/163-59-1-47/50

Oxidation and Nitriding of Alloy Steel in Nitrate-Nitrite Media

ASSOCIATION: Rostovskiy-na-Donu Gosudarstvennyy universitet
(Rostov-na-Donu State University)

SUBMITTED: June 24, 1958

Card 3/3

PROTSENKO, P.I.; POPOVSKAYA, N.P.

Nature of fused salts. Izv.vys.ucheb.zav.;khim.i khim.tekh. 4 no.3:345-348 '61. (MIRA 14:10)

1. Rostovskiy-na-Donu gosudarstvennyy universitet. kafedra obshchey i neorganicheskoy khimii.
(Systems(Chemistry))
(Salts)

PROTSENKO, P.I.; POPOVSKAYA, N.P.; Prinimali uchastiye: Dneprovskaya, G.G.; PROTSENKO, A.V.

Electric conductivity of the melts of some nitrates and their mixtures. Zhur. fiz. khim. 35 no. 4:867-870 Ap '61. (MIRA 14:5)

1. Rostovskiy gosudarstvennyy universitet, Rostov-na-Donu.
(Nitrates--Electric properties)

S/076/61/035/004/008/018
B106/B201

5.4600 (1208, 1273, 1087)

AUTHORS: Protsenko, P.I., and Popovskaya, N. P.

TITLE: Electrical conductivity of some nitrate melts and their mixtures

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 4, 1961, 867 - 870

TEXT: In continuation of previous studies devoted to the systematic investigation of the electrical conductivity, the specific weight, and the molecular volume of nitrate melts and nitrate mixtures, the authors of the present paper determined experimentally the electrical conductance of mixed melts of the two binary systems silver nitrate - cesium nitrate, and silver nitrate - potassium nitrate. The method used for the investigation has been already described earlier (Ref. 3: Zh. obshch. khimii, 24, 2119, 1954; Ref. 4: Zh. fiz. khimii, 29, 225, 1955). The electrical conductance was measured polythermally in the temperature range of 180-340°C. From the resulting polytherms, the isothermal lines were established at intervals of 20°C each. In the binary system silver nitrate - cesium nitrate, two che-

S/076/61/035/004/009/018
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mical compounds appear in the liquidus curve of the phase diagram: $3AgNO_3 \cdot CsNO_3$, which melts regularly, and $AgNO_3 \cdot CsNO_3$, which melts under decomposition. The electrical conductivity of this system has been measured by the authors for the first time. Results are presented in Fig. 1. As may be seen, the two abovementioned compounds do not appear in the isothermal lines of the electrical conductance. The binary system silver nitrate - potassium nitrate has been earlier studied by Ussov (Ref. 8: Z. anorgan. Chem., 38, 419, 1904) and by A. P. Palkin and co-workers (Ref. 9: Reaktsii v otsutstviye rastvoritelya, Voronezh, 1939, 7-14). Compound $AgNO_3 \cdot KNO_3$ appears in the liquidus curve of the phase diagram of this system. The electrical conductivity of the latter has been studied by V. D. Polyakov (Ref. 10: Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 26, 147, 1955) and H. C. Cowen and H. J. Axon (Ref. 11: Trans. Faraday Soc., 52, 242, 1956). According to data by V. D. Polyakov, the isothermal lines of conductance exhibit two minima, one of which corresponds to compound $AgNO_3 \cdot KNO_3$, and the other to compound $2AgNO_3 \cdot KNO_3$; according to data from Ref. 11, by contrast, the isothermal lines have a monotonous course, with-

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out the appearance of a minimum, and display only insignificant negative deviations from additivity determined from the conductances of the components. Careful measurements made by the authors revealed that the isothermal lines actually represented curves with a monotonous course, slightly inclined toward the abscissa, and exhibiting no particular points, breaks, or minima (Fig. 2). These results are in good agreement with the data given in Ref. 11. Whereas the statement has been repeatedly found in the literature that the liquidus curves of phase diagrams and the isothermal lines of the electrical conductance of fused salt baths have an identical course, the authors' investigation yielded results to the contrary. The isothermal lines of the conductance of the two systems concerned have a wholly homogeneous course, without any sign of a chemical reaction between the components. No matter what the form of the liquidus curves of the phase diagrams, the form of the isothermal lines of the electrical conductance in the systems so far studied by the authors (nitrate-, nitrite-, and nitrate-nitrite systems) can be assigned to three types: (1) straight-lined isotherms, deviating little or not at all from additivity; (2) concave isothermal lines with slight negative deviations from additivity; (3) convex isothermal lines with slight negative deviations from

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additivity. A common feature in all three types is the absence of particular points, independently of the reactions of the components at the moment of crystallization from the melt. The absence of extreme values can be regarded as an indirect evidence of the ionic structure of nitrate melts and their mixtures, and proves that the chemical compounds forming in crystallization from the melt spontaneously dissociate to ions at temperatures above the liquidus curve. These ions form associates with undefined and changing composition, whose spherical volume is a function of the concentration of the initial components, of the ion charges, the ion radii, and the ratio between the ionic fields of forces. The course of the isothermal lines of conductance is also defined thereby. Measurements of refractive indices, and of molecular refractions, of mixtures of silver- and potassium nitrate, carried out by H. Bloom and D. C. Rhodes (Ref. 17: J. Phys. Chem., 60, 791, 793, 1956), yielded similar results. G. G. Dneprovskaya and A. V. Protsenko took part in the experimental work. There are 2 figures and 17 references: 14 Soviet-bloc and 3 non-Soviet-bloc. The two references to English language publications read as follows: H. C. Cowen, H. J. Axon, Trans. Faraday Soc., 52, 242, 1956; H. Bloom, D. C. Rhodes, J. Phys. Chem., 60, 791, 793, 1956.

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22002
S/076/61/035/004/009/018
B106/B201

Electrical conductivity of some ...

ASSOCIATION: Rostovskiy gosudarstvennyy universitet Rostov-na-Donu
(Rostov State University Rostov-na-Donu)

SUBMITTED: July 24, 1959

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POPOVSKAYA, M.P.; PROTSENKO, P.I.

Temperature dependence of the electric conductance of nitrates and their mixtures in melts. Zhur.neorg.khim. 7 no.9:2237-2240 S '62. (MIRA 15:9)

(Nitrates--Electric properties)

POPOVSKAYA, N.P.; PROTSENKO, P.I.; YELISEYEVA, A.F.

Electric conductance and density of melts in the binary systems involving sodium nitrate. Zhur. neorg. khim. 9 no.5:1211-1213 My '64. (MIRA 17:9)

PROTSENKO, P.I.; PROTSENKO, A.V.; POPOVSKAYA, N.P.

Electroconductivity of fused alkali metal nitrites. Zhur. neorg. khim. 9 no.8:1951-1954 Ag '64. (MIRA 17:11)

1. Rostovskiy-na-Donu gosudarstvennyy universitet.

POPOVSKAYA, O.M.; KACHAYEVA, O.L.

Relation of soil temperature in a potato field to air temperature.
Trudy TSIP no.145:186-191 '65. (MIRA 18:10)

POPOVSKAYA, O.M.; KACHAYEVA, O.L.

Microclimatic characteristics of a potato field in the Moscow region. Trudy TSIP no.140:118-135 '65. (MIRA 18:7)

POPOVSKAYA, O. M. Cand Geog Sci -- (diss) "Agrometeorological conditions of the growth of potatoes in central ~~oblasts~~ of ~~the~~ European ~~territory of the~~ USSR." Mos, 1959. 13 pp (Main Administration of ~~the~~ Hydrometeorological Service under the Council of Ministers USSR. Central Inst of Forecasts), 150 copies (KL, 43-59, 121)

POPOVSKAYA, O.M.

Soil moisture resources in potato fields in central provinces of the European part of the U.S.S.R. Trudy TSIP no.88:102-117 '59. (MIRA 12:8)

(Soil moisture) (Potatoes)

M

USSR/Cultivated Plants. Potatoes, Vegetables, Melons.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 77656.

Author : Popovskaya, O.M.
Inst :
Title : Agro-Meteorological Conditions of Growth of Potatoes.

Orig Pub: Vestn. s.-kh. nauki, 1957, No 8, 127-133.

Abstract: Observations for many years of the growth of tubers of the Lorkh variety in the Scientific-Research Potato Economy Institute and the Central Institute of Prognoses showed that in the conditions of the central oblasts of the European part of the USSR, the greatest increases of potato harvest is gained with the temperature at 16-18° and a reserve of productive moisture in the soil layer of 0-50 cm, equal to 60-70 mm, which comprises 80-100% of the

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Abs Jour: Ref Zhur-Biol., No 17, 1958, 77656.

minimum field moisture reserve. The basic regularities are the same for sandy and clayey soils. The characteristic is given of the dependence of the ten-day growth of potato tubers on the meteorological conditions in the period from flowering to the withering of the leaves, of the average duration of the period from planting to the appearance of sprouts depending on the soil temperature. -- G. N. Chernov.

MIKHAYLOV, A.N., otv.red.; SAKULINSKAYA, M.G., otv.red.; GULINOVA, N.V., nauchnyy sotrudnik, retsenzent; KACHAYEVA, O.L., nauchnyy sotrudnik, retsenzent; POPOVSKAYA, O.M., nauchnyy sotrudnik, retsenzent; POBETOVA, T.A., nauchnyy sotrudnik, retsenzent; RUDNEV, V.M., nauchnyy sotrudnik, retsenzent; SAVZDARG, S.F., nauchnyy sotrudnik, retsenzent; USHAKOVA, T.V., red.; VLADIMIROV, O.G., tekhn.red.

[Agroclimatic reference book on Chuvashia] Agroklimaticheskii spravochnik po Chuvashskoi ASSR. Leningrad, Gidrometeor.izd-vo, 1960. 127 p. (MIRA 13:11)

1. Gorkiy. Gidrometeorologicheskaya observatoriya. 2. TSentral'nyy institut prognozov (for Gulinova, Kachayeva, Popovskaya, Pobetova, Rudnev, Savzdarg).
(Chuvashia--Crops and climate)

POPOVSKAYA, O.M.

Rate of development of the potato during the planting-sprouting period. Trudy TSIP no.41:56-71 '55. (MLRA 9:1)
(Potatoes)

POPOVSKAYA, O. M.

14-1-713

Summary translation from: Referativnyy Zhurnal, Geografiya, 1957, Nr 1, p. 85 (USSR)

AUTHOR: Popovskaya, O. M.

TITLE: On the Method of Determining Dates of the Stable Transition of Air and Soil Temperatures Above Certain Limits (K metodike opredeleniya dat ustoychivogo perekhoda temperatury vozdukha i pochvy cherez opredelennyye predely)

PERIODICAL: Tr. Tsentr. in-ta prognozov, 1956, Nr 47 (74), pp. 93-96

ABSTRACT: A comparison is made of several methods for determining dates of the stable transition of air and soil temperatures above certain limits, particularly 7°C. In the absence of data on average daily temperatures, average 10-day rather than average monthly temperatures should be taken. In plotting probability curves from transition dates along the mean quadratic deflection the daily, ten day or monthly method may be used with almost equal accuracy.

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POPOVSKAYA, O.M.

Methodology of evaluating growing conditions of potatoes in the central provinces of the European territory of the U.S.S.R. Trudy TSIP no.53:43-57 '57. (MLRA 10:8)
(Meteorology, Agricultural) (Potatoes)